

## ABSTRACT

[0038] An addition circuit for producing a sum of four redundant binary numbers includes a 4:2 compression adder for receiving each of the operand fields of the four redundant binary numbers, and producing a first sum field and a first carry field therefrom. The addition circuit further includes a 4:3 compression adder for receiving each of the sparse carry-save fields of the four redundant binary numbers, and producing a second sum field therefrom. The addition circuit also includes a 3:2 compression adder for receiving the first sum field, the first carry field and the second sum field, and producing a third sum field and a second carry field therefrom. The third sum field and the second carry field are the final results from addition of the four redundant binary numbers.